

Docket No.: 50090-334

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of

Masanobu IWASAKI, et al.

Serial No.: 09/934,474

Filed: August 23, 2001

Group Art Unit: 3723

Examiner: SHAKERI, Hadi

For: POLISHING SOLUTION SUPPLY SYSTEM, METHOD OF SUPPLYING  
POLISHING SOLUTION, APPARATUS FOR AND METHOD OF POLISHING  
SEMICONDUCTOR SUBSTRATE AND METHOD OF MANUFACTURING  
SEMICONDUCTOR DEVICE

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**REPLY BRIEF**

Commissioner for Patents  
Washington, DC 20231

Sir:

This Reply Brief is submitted in response to the Examiner's Answer mailed  
**November 22, 2002.**

**ARGUMENTS**

Initially, Appellants regret any inconvenience stemming from the typographical oversights in the claims in the Appendix to the Brief, noted by the Examiner. As appreciated by the Examiner, these minor errors do not impact the issues on the Appeal.

Appellants submit that the Examiner's rejection is factually and legally erroneous for the reasons set forth in the Appeal Brief of November 4, 2002. The additional

arguments advanced by the Examiner in the Answer of November 22, 2002 the lack of facts and the lack of motivation.

**Insufficient Facts/No Motivation**

As a **factual** matter, it is undisputed on this record that the primary reference to Murphy et al. neither discloses nor suggests anything about using a mist. It is also undisputed, as a **factual** matter, that Chamberlin et al. neither disclose nor suggest separately spraying a mist of an abrasive slurry, mist of an additive and mist of pure water, either to a mixing tank or on a surface of a polishing table. **How** then does the Examiner propose to arrive at the claimed invention?

The Examiner notes that Murphy et al. disclose two embodiments: one in which the abrasive slurry ingredients are mixed prior to impinging upon the polishing table and another embodiment wherein the separate slurry ingredients are impinged on the polishing table. Still no mist.

As best understood from the Answer. The Examiner is of the opinion that if each of the above noted embodiments of Murphy et al. were modified by the teachings of Chamberlin et al., the claimed invention would result. The pivotal issue, however, is not **if** the embodiments of Murphy et al. were modified, or what the modified embodiments of Murphy et al. would look like. Rather, the issue is whether the Examiner has complied with the mandate of the Court of Appeals for the Federal Circuit by identifying a proper factual basis and establishing the requisite motivational element to combine the applied references. **The Examiner has not discharged that burden.**

In order to establish the requisite motivational element, the Examiner must make a "thorough and researching" factual inquiry and, based upon that factual inquiry, explain **why** one having ordinary skill in the art would have been realistically motivated to modify particular prior art, in this case the above identified embodiments of Murphy et al., to arrive at the claimed invention. *In re Lee*, 237 F.3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002). In other words, **facts** and **reasons** are required. This the Examiner has not done. Instead, the Examiner assumes into existence phantom prior art generated by the combined disclosures of the applied prior art.

Appellants would question: **Why** would one having ordinary skill in the art have been realistically led to modify the above noted embodiments of Murphy et al. to operate in a manner different from the manner in which the teaching reference to Chamberlain et al. operates. As previously pointed out, Chamberlain et al. teach spraying a mist of the entire slurry composition on the surface of a polishing table. **If** one having ordinary skill in the art would have been motivated to modify the teachings of Murphy et al., the entire slurry composition would be sprayed on the surface of the polishing table. Chamberlain et al. do not teach **separately** spraying a mist of each slurry ingredient into a mixing tank, or **separately** spray the mist of each slurry ingredient on the surface of a polishing table. Clearly, the Examiner's assumed modification of the embodiments of Murphy et al. is not motivated by the teachings of Chamberlain et al. which is to spray the **entire** slurry composition on the surface of a polishing table. Rather, the Examiner's proposed modification of the teachings of Murphy et al. can only be traced to Appellants' disclosure. Appellants' disclosure, of course, is forbidden territory upon which the

Examiner may excavate for the requisite motivational element. *Panduit Corp. v. Dennison Mfg. Co.*, 774 F.2d 1082, 227 USPQ 337 (Fed. Cir. 1985).

### **Evidence of Nonobviousness**

The Examiner has not disputed the fact that the present invention addresses and solves the problem of agglomeration of coarse abrasive grains, due the additive used in a conventional CMP slurry, with attendant scratching of the semiconductor substrate and reduction in yield. The Examiner does not dispute the fact that this problem is not even on the radar screen of each of the applied references. Under such circumstances, the problem addressed and solved by the claimed invention merits consideration anent the nonobviousness issue. *North American Vaccine, Inc. v. American Cyanamid Co.*, 7 F.3d 1571, 28 USPQ2d 1333 (Fed. Cir. 1993); *Northern Telecom, Inc. v. Datapoint Corp.*, 908 F.2d 931, 15 USPQ2d 1321 (Fed. Cir. 1990); *In re Newell*, 891 F.2d 899, 13 USPQ2d 1248 (Fed. Cir. 1989); *Jones v. Hardy*, 727 F.2d 1524, 220 USPQ 1021 (Fed. Cir. 1984).

### **Legal error**

In the ultimate sentence in the paragraph bridging pages 3 and 4 of the Answer, the Examiner asserts that the argument with respect to nonobviousness "...is not persuasive since slurry having coarse abrasive grains is not even claimed and the references combined meet all the claims limitations." Suffice it to say, Appellants are not aware of, and the Examiner has not cited, any legal precedents for the proposition that the problem addressed and solved by a claimed invention must be presented in the claim in order for it to merit consideration as an indicium of nonobviousness. As far as the

combined teachings of the references meeting all of the claimed limitations, for reasons previously advanced, the Examiner failed to establish the requisite **fact-based** realistic **motivation** to combine the applied references. *Panduit Corp. v. Dennison Mfg. Co.*, *supra*.

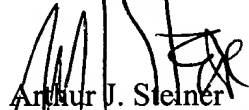
### **Conclusion**

Based upon the arguments submitted in the Appeal Brief, and for the reasons submitted herein, Appellants submit that the Examiner's rejection of the appealed claims under 35 U.S.C. §103 is not factual or legally viable. Appellants, therefore, respectfully solicit the Honorable Board the reverse the Examiner's rejection of the appealed claims under 35 U.S.C. §103.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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**Date: January 22, 2003**